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Ro Webb City Missouri
Zinc and Lead Development Work



The Metals Reserve Co recently approved the application of Brown and Root Inc for an advance of \$80,000 to do certain Zinc & Lead development work in the Webb City Missouri Mining Area It is my understanding that a letter with reference to this application signed by Mr G Temple Brigman Executive Vice President, Metals Reserve Co has been received by the Houston Office of Brown and Root Inc

While the writer was discussing this project in Washington recently with Mr Frank C Cameron of your company he was instructed by Mr Cameron to prepare a budget for the work Brown and Root Inc expects to do in the Drainage Area Number One. This area is in the northern portion of block of Mining Leases owned by Brown and Root Inc

Brown and Root Inc have applied to the Zinc Board of the War Production Board for certain funds to develop their Leases in the Webb City Area The War Production Board has requested Brown and Root Inc to do certain exploratory work in the area to confirm certain estimates of ore reserves before definitely passing on the application by Brown and Root Inc for funds to further develop the area The Zinc Board of the War Production Board has asked Brown and Root Inc to start the first exploratory work in the Northern part of their lease block in Drainage Area Number One

In compliance with the suggestion of the War Production Board we are submitting herewith a budget for the development in Drainage Area Number One. Shortly before the completion of this work it is the intention of Brown and Root Inc. to submit an additional budget to the Metals Reserve Co. for approval for the remainder of the exploratory work in the entire Leased Area.

Three copies of the budget and three sets of the maps showing the tentative locations of the test holes (outlined in red) have been prepared and are submitted herewith

At a recent conference the tentative test hole locations were made jointly by the following Engineers Mr Otto Ruhl Engineer for the Bureau of Mines in the Joplin Area Mr Carl Plumb a prominent Consulting Engineer of Joplin, Mo and Mr William Stewart of Joplin, Mo consulting Engineer for Brown and Root Inc

It is our present thought that 82 churn drill test holes should be drilled in the presently owned Mining Leases of Brown and Root Inc in Drainage Area Number One Brown and Root Inc are negotiation with the owners of what are locally known as the Unity Holdings in section 6 in

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township 28 N , 32 W and section 1 township 28 N , 33 W for a mining lease on these holdings should these negotiations be consummated it is our thought that ten test holes should be drilled on the Unit's Properties

Tentative Locations
of
Churn Drill Exploratory Holes
in
Drainage Area Number One
Webb City Area

Plate #1				Check Drill Holes			
S E	1/4	NE	Sec 1- T 28 N R 33 W	3	"	"	unity
N E	1/4	SE	" 1	6	"	"	"
S E	1/4	SE	" 1	5	"	"	"
N E	1/4	NE	" 12	2	"	"	"
N W	1/4	NE	" 12	2	"	"	"
N E	1/4	NW	" 12	5	"	"	"
N W	1/4	NW	" 12	1	"	"	"
S W	1/4	NW	" 12	1	"	"	"
S E	1/4	NW	" 12	5	"	"	"
S W	1/4	NE	" 12	5	"	"	"
N W	1/4	SE	" 12	5	"	"	"
N E	1/4	SE	" 12	5	"	"	"
S W	1/4	SE	" 12	1	"	"	"
S E	1/4	SE	" 12	5	"	"	"
N W	1/4	SW	" 6 R 32 W	1	"	"	"
S W	1/4	SW	" 6	2	"	"	"
S W	1/4	SW	" 7	9	"	"	"
				63			

Plate #2				drill holes			
N W	1/4	NE	Sec 7 Twp 28 N R 32 W	4	"	"	
S W	1/4	NE	" 7	1	"	"	
S E	1/4	NE	" 7	1	"	"	
N W	1/4	SE	" 7	1	"	"	
N E	1/4	SE	" 7	6	"	"	
S W	1/4	SE	" 7	2	"	"	
S E	1/4	SE	" 7	3	"	"	
N E	1/4	NE	" 18	7	"	"	
N W	1/4	N.W	" 17	4	"	"	
				29			

Drilling

It is the thought of Mr Otto Ruhl Bureau of Mines Engineer, Mr Carl Plumb Consulting Engineer and Mr William Stewart Consulting Engineer that the following churn drilling program together with the data presently available would be sufficient to afford an accurate estimate of the Ore Reserves underlying the Mine Leases of Brown and Root Inc in Drainage Area Number One

It is recommended that at least twelve Drilling Rigs be used in the test drilling of Drainage Area Number One

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It is recommended that locations shown be considered as tentative in as much as it may be necessary to shift them a short distance should their location fall on chat piles or in caved ground or should there be some other natural obstacle in the way of making a location at the tentative point selected. It is also entirely possible that as the drilling campaign progresses it may be necessary to move the locations on account of results obtained.

Having in mind the testing of the Sheet Ground throughout the leased area and the Reed Springs formation over a portion of the area the following program was recommended. The location of the test hole be accurately tied to both the property lines and the nearest open shaft by surveys also the sea level elevations of the top of the test hole be obtained. That the starting hole be of such diameter that 8" surface casing be set on top of first rock, that 6 1/4" or 6 5/8" casing be set on top of the sheet ground and a 4 7/8" hole then drilled thru the ore zone of the sheet ground. In drilling above the sheet ground cutting samples should be saved at five foot intervals. In drilling through the ore zone cutting samples should be taken at intervals not greater than two and one half feet.

When it is desired to drill thru the sheet ground and test the underlying Reed Springs Formation the 6 1/4" or 6 5/8" casings should be pulled and the hole reamed thru the Sheet Ground Ore Zone and the casing reset below the Sheet Ground Ore Zone. A 4 7/8" hole then be drilled and sampled thru the ore zone of the Reed Springs Formation.

It was recommended that the tops and bottoms of all ore zones and the bottom of the hole be measured with a steel line.

On completion of the hole all casing be pulled except in those holes in which the engineers of the Metals Reserve Co wish to leave the surface casing.

Sampling

Subject to the approval of the Metals Reserve Co it is the present intention of Brown and Root Inc. to run 12 drilling rigs in North Drainage Area. Should these rigs be operated not more than ten or twelve hours per day the drilling and sampling will be under the direct control of the following, one project engineer, one chief sampler and four sample men. Should the operators of sufficient number of drilling crews decide to run more than one shift per day it may be necessary to employ additional sample men to take care of the extra drilling crews.

It has been recommended that the samples be taken as follows. All five foot samples of cuttings above the ore zones be set aside for study of the geologists and engineers.

When sampling thru ore zone the cuttings from the bottom of the hole will be bailed out with a sand pump the sand pump will be emptied into a large sack, similar to a sugar sack. This sample to include all rock cuttings, sludge and wash water.

The sample will then be taken to the cutting room for frying and quartering. Portions of the quartered sample will be sent to the assayer approved by the Metals Reserve Co. The assayer after grinding sample to a pulp will assay portions of the sample and save portion of the same in case a check assay is of the pulp sample is desired. Portions

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of the original rock cuttings sample will be placed in a fruit jar marked and sealed to be saved so that check assays may be run on it if desired

Drilling Progress

All drilling contractors contacted agree that running one 10 or 12 hour shift per day for each rig under normal conditions should sample and complete one hole thru the sheet ground and in some instances thru the Reed Springs per week

With twelve rigs operating we hope to have twelve test holes accurately sampled and completed per week,

Drilling Costs

The writer has endeavored to check the prices paid for churn drilling of this character and found the prices as follows About ten or twelve years ago during the depression the prices were about \$1.00 per foot for holes of this size For the past three years the major mining companies have been paying \$1 10 to \$1 25 per foot. When \$1 10 was paid no casing below the surface casing was run free by the driller When the driller ran casing or had drilling trouble the mining operator paid the driller at day rates

For the drilling program that the Engineers have recommended the better class contractors are asking \$1 25 per foot When holes are drilled in the Reed Spring in addition to the \$1.25 per foot the drillers are asking \$30 00 per day for reaming from the casing seat above the sheet ground to the casing seat above Reed Springs and resetting casing The \$30 00 should be added to footage cost of all Reed Springs holes

Original bids from drilling contractors have been received and are submitted herewith

Assaying

The writer has contacted representatives of the various mining and Milling Companies, the U.S Bureau of Mines and prominent local assayers with the following results Neither the American Zinc Lead and Smelting Co nor the Eagle Ficher Mining and Smelting Co are doing commercial assaying The writer was also informed that wither the Cochran Laboratories or the Bruce Williams Laboratories do all assaying for these companies other than company research work

The writer contacted Mr Mc Millan, Division Engineer, of the U S Bureau of Mines who stated that the U S Bureau of Mines Assay Laboratories had so many samples submitted to them at the present time that they were compelled to place a certain portion of their work elsewhere They are now having Bruce Williams of Joplin do a certain amount of work for them A copy of Mr Mc Millans letter is enclosed herewith

The writer contacted the three leading assayers in Joplin The Cochran Laboratories, The Bruce Williams Laboratories and The Miller Chemical Laboratory Bids have been obtained from these Laboratories and copies of the same are submitted herewith it would appear from the bids as though the Bruce Williams is the low bidder If this Laboratory is satisfactory to the Metals Reserve Co it will be to Brown and Root Inc

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Surveying and Drafting

The writer has asked the Wm Ste art Engineering Co to submit a bid upon the estimated amount of surveying and drafting in connection with this project A copy of this bid is submitted herewith

Labor in Field

Other than the contracted surveying the other labor to be paid from the fund would be as follows

Project Engineer	\$300 00 per mo
Project Engineers Car Hire	40 00 per mo
Head Sampler 12 hour day	250 00 per mo.
Three sample helpers 12 hour day	7 50 per day
One helper with pick up truck 12 hour day	13 50 per day

Estimate of Materials and Equipment

1 single sample cutter	@ \$10.00	\$10 00
1 sample (machine) cutter	@ 35 00	35 00
18 tubs	@ 2 00	36 00
18 twelve quart pails	@ 1 00	18 00
4 square Bruno shovels	@ 2 00	8.00
1 piece sheet iron	@ 5.00	5 00
1 9x10 12 oz canvas	@ 10.00	10 00
30 doz. pint glass jars	@ 55	16 50
1 300 ft steel tape	@ 30 00	30 00
1000 shipping tags	@ 5.50	5 50
1000 drill record blanks	@ 10 00	10 00
Pencils, erasers, note books	@ 10 00	10 00
10 tons coal	@ 5.50	55 00
	total	\$249 00

A certain amount of these supplies may be salvaged from this job, possibly not over \$40 00 in value

Project Engineer

Mr Carl Plumb an engineer of many years experience in Tri State Area has been recommended as project engineer to Brown and Root Inc by both Mr Mc Millar and Mr Ruhl of the U.S Bureau of Mines A copy of Mr Ruhl's letter of recommendation is submitted herewith A copy of Mr Plumb's service record is submitted herewith

Samplers

Mr T P Donoho has been recommended by the U S Buresu of Mines to the writer for the position of chief sampler It is the writers understanding that he has been employed in the past by the Bureau of Mines in this capacity

The four assistant samplers have been recommended wither by the U S Bureau of Mines or Mr T P Donoho or by both

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Budget Exploratory
 Webb City Drainage Area No. 1
 92 churn drill test holes

Supplies		\$249 00
Churn Drilling	50 holes thru Reed Springs Ore Zone average depth 256' @ \$1 25 per foot plus 30 x \$30 00 reaming charge	\$9,600 00 900 00
	62 holes thru sheet ground ore zone average depth 210' @ \$1 25 per foot	\$16,275 00
	Sampling 6 weeks @ \$273 50	2,168 00
	Assaying 722 Assays @ \$1 33	975 00
Survey and drafting 6 weeks	@ \$250 00 per week	2,000 00
Insurance, Employers and Public Liability and Auto Insurance, estimate		2 0 00
	total	\$32,387 76

Total footage
 Sheet ground 62x210 = 13,020 lin. ft.
 Reed Springs 30x256 7,680 lin ft
 92 holes total footage = 20,700 lin feet

$\frac{32,387}{20,700} = \$1 56$ per lin foot

Note Surveying and drafting can only be approximated, may be slightly more or less

Some of the supplies purchased may be salvaged when job is completed

If the Metals Reserve Co approves the above budget and wishes to authorize Brown and Root Inc to proceed with the exploration in the Webb City Area I will appreciate your advising me at your earliest convenience

If however the Metals Reserve Co is desirous of making any changes in the budget or wishes to receive additional information please advise me

Brown and Root Inc will appreciate your mailing one copy of your letter to Brown and Root Inc P O Box #3, Houston Texas and a second copy of your letter to D M Cashin, Agent, Brown and Root Inc 223 east Third St Joplin, Mo

Respectfully submitted,
 Brown and Root Inc
 by D M Cashin, Agent

D M Cashin, Agent

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